Title (en)

Methods and compositions for amplifying detectable signals in specific binding assays

Title (de)

Verfahen und Zusammensetzungen zur Vermehrung von feststellbaren Signalen in spezifischen Bindungstests

Title (fr)

Methodes et compositions pour l'amplification des signaux detectables en essais a liaisons specifiques

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Application

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Abstract (en)

Methods and compounds are provided for detecting target molecules in a sample using specific binding assays. In particular, methods are provided for detecting a nucleic acid target in a sample. In one embodiment, the method comprises hybridizing a nucleic acid target, comprising a target nucleic acid sequence, to a nucleic acid probe, comprising a probe nucleic acid sequence, wherein the target comprises a binding ligand. The hydridized target is contacted with a receptor comprising multiple sites capable of binding the binding ligand to complex the receptor to the binding ligand, and the receptor is contacted with an amplification reagent, comprising a plurality of the binding ligands, to complex the amplification reagent to the receptor. The presence of the complexed amplification reagent then is detected, for example, by detecting the presence of a detectable label, such as a fluorescent label, for example, on the receptor or the amplification reagent. Optionally, the amplification reagent, comprising a plurality of the binding ligands, is contacted with labeled receptor molecules thereby to complex a plurality of labeled receptor molecules to the amplification reagent, and the labeled receptor molecules complexed to the amplification reagent are detected. This permits the detectable signal to be enhanced and amplified. In one embodiment, the binding ligand is biotin, the receptor is streptavidin, and the amplification reagent is an antibody or a DNA matrix. In another embodiment, an array of different nucleic acid probes immobilized on a surface, each having a defined sequence and location on the surface, may be used in the assays, thus permitting screening and detection of binding of a large number of nucleic acids. <IMAGE>

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